ecopure®

Installation and Operation Manual

Models
EP 7130 & EP 7140

How to install, operate and maintain your Demand Controlled Water Softener

Do not return water softener to store

If you have any questions or concerns when installing, operating or maintaining your water softener, call our toll free number:

1-800-693-1138

Monday- Friday, 7 AM - 6 PM CST

(in **Canada** please call 1-866-725-9662)

or visit **www.ecopurewaterproducts.com**

When you call, please be prepared to provide the model and serial number of your product, found on the rating decal, typically located on the rim below the salt lid hinges.

Systems tested and certified by NSF International against NSF/ANSI Standard 44 for hardness reduction and efficiency, and certified to NSF/ANSI Standard 372.

Manufactured and warranted by
Ecodyne Water Systems
1890 Woodlane Drive
Woodbury, MN 55125

7339913 (Rev. A 7/22/13)

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WATER SOFTENER WARRANTY

Warrantor: Ecodyne Water Systems, 1890 Woodlane Drive, Woodbury, MN 55125

Warrantor guarantees, to the original owner, that:

One Year Full Warranty:

- For a period of one (1) year from the date of purchase, all parts will be free from defects in materials and workmanship and will perform their normal functions.
- For a period of one (1) year from the date of purchase, labor to repair or replace any part deemed to be defective in materials or workmanship, will be provided at no additional cost.

Limited Warranties:

- For a period of ten (10) years from the date of purchase, the salt storage tank and fiberglass mineral tank will not rust, corrode, leak, burst, or in any other manner, fail to perform its proper functions.
- For a period of three (3) years from the date of purchase, the electronic control board will be free of defects in materials and workmanship and will perform its normal functions.

If, during such respective period, a part proves to be defective, Warrantor will ship a replacement part, directly to your home, without charge. After the first year, labor necessary to maintain this product is not covered by the product warranty. If you have questions regarding a warranted product, need assistance with installation or troubleshooting, wish to order a part or report a warranty issue, we are just a phone call away. SIMPLY DIAL 1-800-693-1138, Monday - Friday, 7 AM - 6 PM CST, for assistance.

This water softener is manufactured by
Ecodyne Water Systems LLC, 1890 Woodlane Drive, Woodbury, MN 55125

General Provisions

The above warranties are effective provided the water softener is operated at water pressures not exceeding 125 psi, and at water temperatures not exceeding 120°F; provided further that the water softener is not subject to abuse, misuse, alteration, neglect, freezing, accident or negligence; and provided further that the water softener is not damaged as the result of any unusual force of nature such as, but not limited to, flood, hurricane, tornado or earthquake.
Warrantor is excused if failure to perform its warranty obligations is the result of strikes, government regulation, materials shortages, or other circumstances beyond its control.

***THERE ARE NO WARRANTIES ON THE WATER SOFTENER BEYOND THOSE SPECIFICALLY DESCRIBED ABOVE. ALL IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED TO THE EXTENT THEY MIGHT EXTEND BEYOND THE ABOVE PERIODS. THE SOLE OBLIGATION OF WARRANTOR UNDER THESE WARRANTIES IS TO REPLACE OR REPAIR THE COMPONENT OR PART WHICH PROVES TO BE DEFECTIVE WITHIN THE SPECIFIED TIME PERIOD, AND WARRANTOR IS NOT LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES. NO WARRANTOR DEALER, AGENT, REPRESENTATIVE, OR OTHER PERSON IS AUTHORIZED TO EXTEND OR EXPAND THE WARRANTIES EXPRESSLY DESCRIBED ABOVE.**

Some states do not allow limitations on how long an implied warranty lasts or exclusions or limitations of incidental or consequential damage, so the limitations and exclusions in this warranty may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state. This warranty applies to consumer-owned installations only.

Specifications & Performance Claims

These models are efficiency rated. The efficiency rating is valid only at the minimum salt dose. These softeners have a demand initiated regeneration (D.I.R.) feature that complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in their operation.

These softeners have a rated softener efficiency of not less than 3,350 grains of total hardness exchange per pound of salt (based on sodium chloride) and shall not deliver more salt than their listed rating or be operated at a sustained maximum service flow rate greater than their listed rating. These softeners have been proven to deliver soft water for at least ten continuous minutes at the rated service flow rate. The rated salt efficiency is measured by laboratory tests described in NSF/ANSI Standard 44. These tests represent the maximum possible efficiency that the system can achieve. Operational efficiency is the actual efficiency after the system has been installed. It is typically less than the rated efficiency, due to individual application factors including water hardness, water usage, and other contaminants that reduce a softener's capacity.

	Model EP 7130	**Model EP 7140**
Model Code	E7130	E7140
Rated Softening Capacity (Grains @ Salt Dose)	14,700 @ 2.9 lbs. 25,400 @ 8.0 lbs. 30,100 @ 13.1 lbs.	11,900 @ 2.4 lbs. 31,800 @ 9.1 lbs. 40,400 @ 15.8 lbs.
Rated Efficiency (Grains/Pound of Salt @ Minimum Salt Dose)	5,060 @ 2.9 lbs.	4,960 @ 2.4 lbs.
Water Used During Regeneration @ Minimum Salt Dose	2.3 gal. / 1,000 grains	3.4 gal. / 1,000 grains
Total Water Used Per Regeneration @ Maximum Salt Dose	35.2 gallons	41.6 gallons
Rated Service Flow Rate	7.5 gpm	9 gpm
Amount of High Capacity Ion Exchange Resin	.82 cu. ft.	1.16 cu. ft.
Pressure Drop at Rated Service Flow	13.4 psig	9.1 psig
Water Supply Max. Hardness	110 gpg	110 gpg
Water Supply Max. Clear Water Iron	8 ppm*	10 ppm*
Water Supply Pressure Limits (minimum / maximum)	20 - 125 psi (137.9 - 861.8 kPa)**	
Water Temperature Limits (minimum / maximum)	40 - 120 °F	
Minimum Water Supply Flow Rate	3 gpm	
Maximum Drain Flow Rate	2.0 gpm	
Salt Storage Capacity	220 lbs.	

*Capacity to reduce clear water iron is substantiated by WQA test data. State of Wisconsin requires additional treatment if water supply contains clear water iron exceeding 5 ppm.

**Canada working pressure limits: 1.4 - 7.0 kg/cm^2.

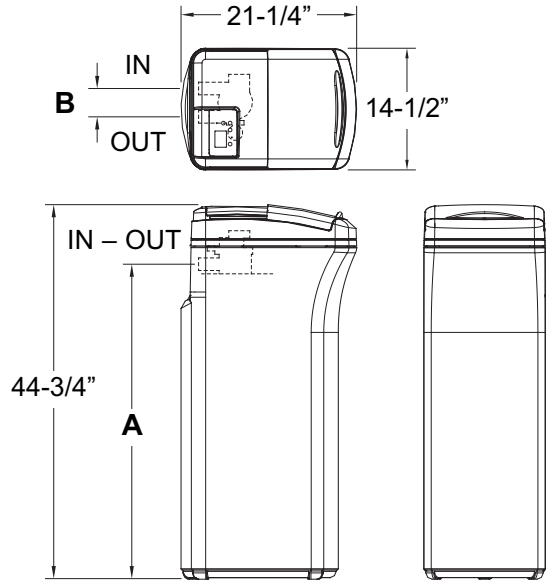
These systems conform to NSF/ANSI 44 for the specific performance claims as verified and substantiated by test data.

Variable Salt Dose: The salt dose is selected by the electronic controls at regeneration time based on the amount needed.

Questions? Call Toll Free 1-800-693-1138 Monday- Friday, 7 AM - 6 PM CST
or visit www.ecopurewaterproducts.com

When you call, please be prepared to provide the model and serial number, found on the rating decal, typically located on the rim below the salt lid hinges.

Dimensions



MODEL	Dimension A	Dimension B
EP 7130	37-7/8”	3-3/8”
EP 7140	38-1/8”	3-3/4”

FIG. 1

Safety Guides

- The water softener requires a minimum water flow of 3 gallons per minute at the inlet. Maximum allowable inlet water pressure is 125 psi. If daytime pressure is over 80 psi, nighttime pressure may exceed the maximum. Use a pressure reducing valve if necessary (Adding a pressure reducing valve may reduce the flow). If your home is equipped with a back flow preventer, an expansion tank must be installed in accordance with local codes and laws.
- The water softener works on 24 volt, 60 Hz electrical power only, supplied by a direct plug-in transformer (included). Be sure to use the included transformer and plug it into a nominal 120V, 60 cycle household outlet that is in a dry location only, grounded and properly protected by an overcurrent device such as a circuit breaker or fuse. Power consumption is 13.5 W maximum and 1.0 W typical. If transformer is replaced, use only UL, CUL or CSA approved Class 2 transformer with the following specifications:
  - Input: 120 VAC, 60 Hz, 13.5 W
  - Output Voltage: 24 VAC
  - Output Current: 400 mA
- Do not use this system to treat water that is microbiologically unsafe or of unknown quality without adequate disinfection upstream or downstream of the system.

European Directive 2002/96/EC requires all electrical and electronic equipment to be disposed of according to Waste Electrical and Electronic Equipment (WEEE) requirements. This directive or similar laws are in place nationally and can vary from region to region. Please refer to your state and local laws for proper disposal of this equipment.

In the state of Massachusetts: The Commonwealth of Massachusetts plumbing code 248-CMR shall be adhered to. A licensed plumber shall be used for this installation.

In the state of California: You must turn the Salt Efficiency Feature setting to ON. This may initiate more frequent recharges. However, it will operate at 4,000 grains per pound of salt or higher. To turn on the Salt Efficiency Feature, follow the instructions in the “Salt Efficiency” section of this manual.

Do not return the water softener to store.

If you have any questions, or there are missing parts or damage, please call **Toll Free 1-800-693-1138**, Monday - Friday, 7 AM - 6 PM CST, or visit **www.ecopurewaterproducts.com**

When you call, please be prepared to provide the model and serial number, found on the rating decal, typically located on the rim below the salt lid hinges.

Inspect Shipment

The parts required to assemble and install the water softener are included with the unit. Thoroughly check the water softener for possible shipping damage and parts loss. Also inspect and note any damage to the shipping carton.

Remove and discard (or recycle) all packing materials. To avoid loss of small parts, we suggest you keep the small parts in the parts bag until you are ready to use them.

Packing List

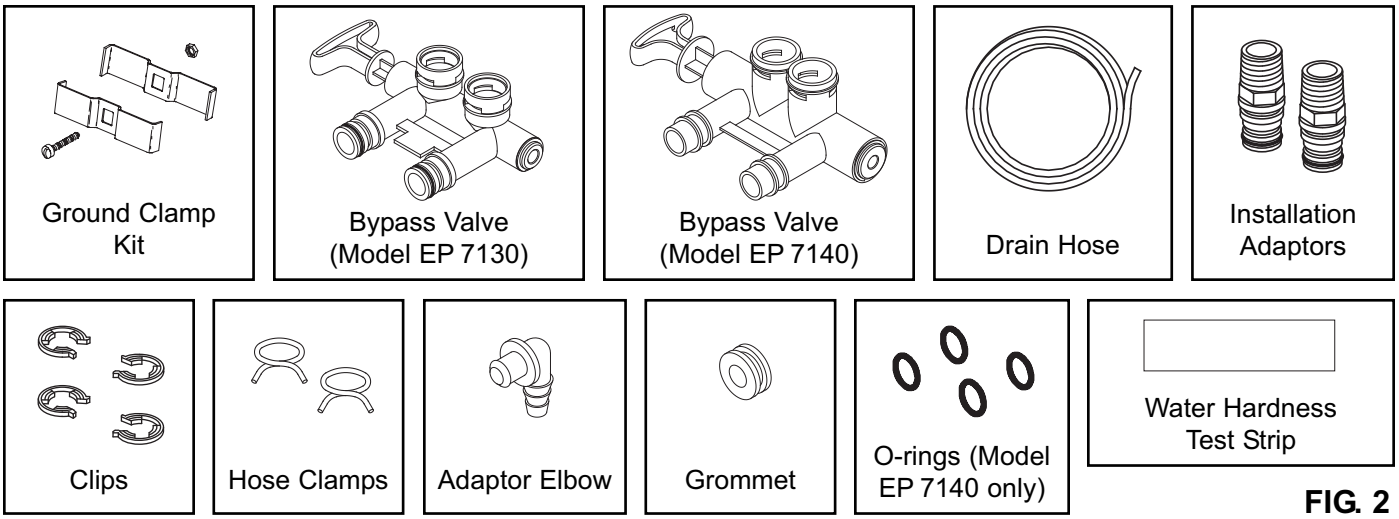


FIG. 2

Water Conditioning Information

IRON

Iron in water can cause stains on clothing and plumbing fixtures. It can negatively affect the taste of food, drinking water, and other beverages. Iron in water is measured in parts per million (ppm). The total* ppm of iron, and type or types*, is determined by chemical analysis. Four different types of iron in water are:

- Ferrous (clear water) iron
- Ferric (red water) iron
- Bacterial and organically bound iron
- Colloidal and inorganically bound iron (ferrous or ferric)

Ferrous (clear water) iron is soluble and dissolves in water. This water softener will reduce moderate amounts of this type of iron (see specifications).** Ferrous (clear water) iron is usually detected by taking a sample of water in a clear bottle or glass. Immediately after taking, the sample is clear. As the water sample stands, it gradually clouds and turns slightly yellow or brown as air oxidizes the iron. This usually occurs in 15 to 30 minutes.

When using the softener to reduce Ferrous (clear water) iron, add 5 grains to the hardness setting for every 1 ppm of Ferrous (clear water) iron. See "Set Water Hardness Number" section.

Ferric (red water), and bacterial and organically bound irons are insoluble. This water softener will not remove ferric or bacterial iron. This iron is visible immediately when drawn from a faucet because it has oxidized before reaching the home. It appears as small cloudy yellow, orange, or reddish suspended particles. After the water stands for a period of time, the particles settle to the bottom of the container. Generally these irons are removed from water by filtration. Chlorination is also recommended for bacterial iron.

Colloidal and inorganically bound iron is of ferric or ferrous form that will not filter or exchange out of water. This water softener will not remove colloidal iron. In some instances, treatment may improve colloidal iron water. Colloidal iron water usually has a yellow appearance when drawn. After standing for several hours, the color persists and the iron does not settle, but remains suspended in the water.

SEDIMENT

Sediment is fine, foreign material particles suspended in water. This water softener will not remove sediment. This material is most often clay or silt. Extreme amounts of sediment may give the water a cloudy appearance. A sediment filter installed upstream of the water softener normally corrects this situation.

* Water may contain one or more of the four types of iron and any combination of these. Total iron is the sum of the contents.

** Capacity to reduce clear water iron is substantiated by WQA test data.

Installation Requirements

LOCATION REQUIREMENTS

Consider all of the following when selecting an installation location for the water softener.

- Do not locate the water softener where freezing temperatures occur. Do not attempt to treat water over 120ºF. Freezing temperatures or hot water damage voids the warranty.
- To condition all water in the home, install the water softener close to the water supply inlet, and upstream of all other plumbing connections, except outside water pipes. Outside faucets should remain on hard water to avoid wasting conditioned water and salt.
- A nearby drain is needed to carry away regeneration discharge (drain) water. Use a floor drain, laundry tub, sump, standpipe, or other options (check your local codes). See "Air Gap Requirements" and "Valve Drain Requirements" sections.
- The water softener works on 24 volt, 60 Hz electrical power only, supplied by a direct plug-in transformer (included). Provide nearby an electrical outlet in accordance with NEC and local codes.
- Always install the water softener between the water inlet and water heater. Any other installed water conditioning equipment should be installed between the water inlet and water softener (See Figure 4 below).
- Avoid installing in direct sunlight. Excessive sun heat may cause distortion or other damage to non-metallic parts.

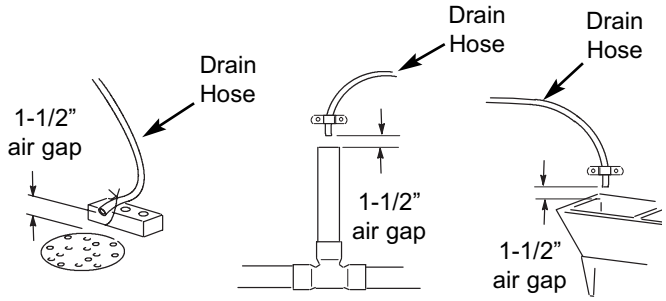
PLUMBING CODES

All plumbing must be completed in accordance with national, state and local plumbing codes.

> In the state of Massachusetts: The Commonwealth of Massachusetts plumbing code 248-CMR shall be adhered to. A licensed plumber shall be used for this installation.

AIR GAP REQUIREMENTS

A drain is needed for regeneration water (See Figure 3). A floor drain, close to the water softener, is preferred. A laundry tub, standpipe, etc. are other drain options. Secure valve drain hose in place. Leave an air gap of 1-1/2” between the end of the hose and the drain. This gap is needed to prevent backflow of sewer water into the water softener. Do not put the end of the drain hose into the drain.



FLOOR DRAIN **STANDPIPE** **LAUNDRY TUB**

FIG. 3

THE PROPER ORDER TO INSTALL WATER TREATMENT EQUIPMENT

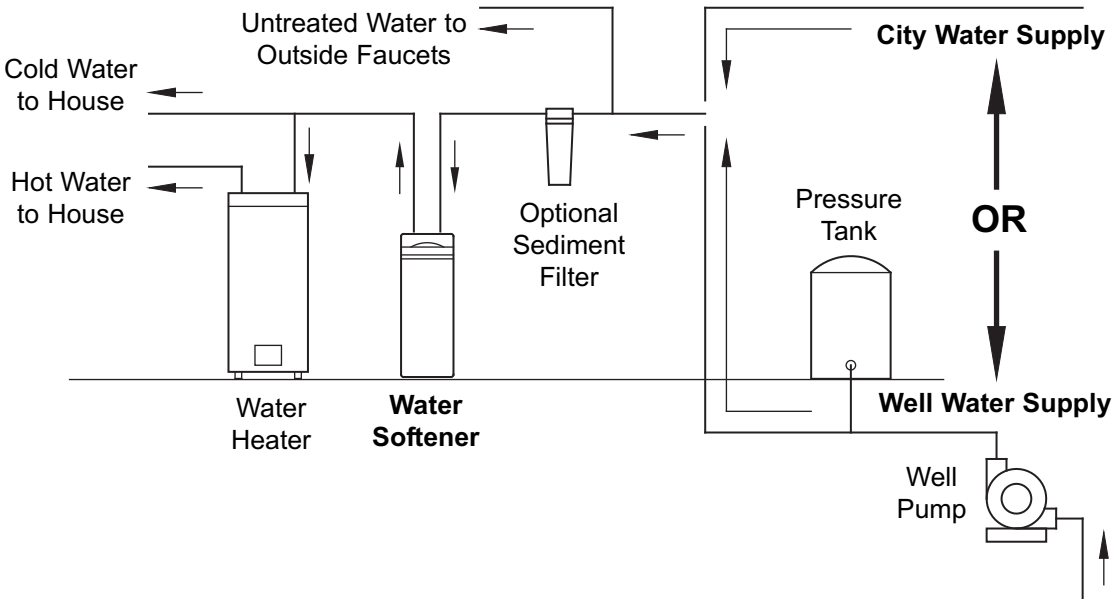


FIG. 4

Installation Requirements

VALVE DRAIN REQUIREMENTS

Using the flexible drain hose (included), measure and cut to the length needed. Flexible drain hose is not allowed in all localities (check your plumbing codes). If local codes do not allow use of a flexible drain hose, a rigid valve drain run must be used. Purchase a compression fitting (1/4 NPT x 1/2 in. minimum tube) and 1/2" tubing from your local hardware store. Plumb a rigid drain as needed (See Figure 6).

NOTE: Avoid drain hose runs longer than 30 feet. Avoid elevating the hose more than 8 feet above the floor. Make the valve drain line as short and direct as possible.

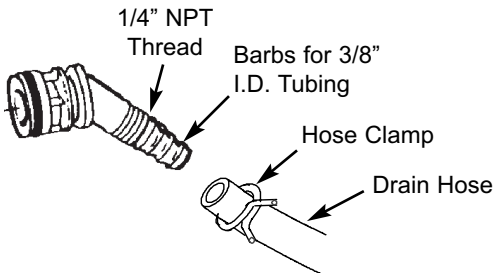


FIG. 5

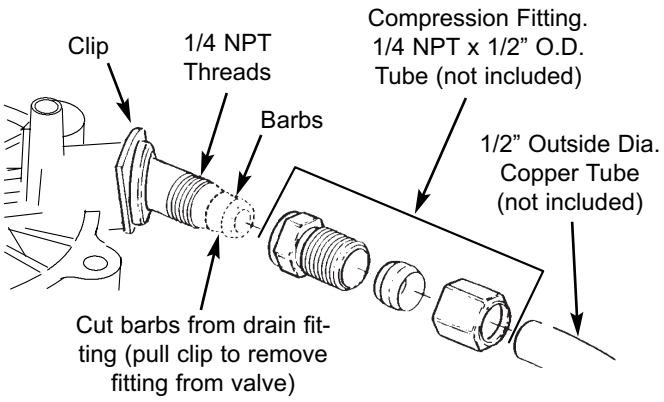

Clip
1/4 NPT Threads
Barbs
Compression Fitting. 1/4 NPT x 1/2" O.D. Tube (not included)
1/2" Outside Dia. Copper Tube (not included)
Cut barbs from drain fitting (pull clip to remove fitting from valve)

FIG. 6

INLET / OUTLET PLUMBING OPTIONS

Always install either a single bypass valve (provided), as shown in Figure 7, or, if desired, parts for a 3 valve bypass system (not included) can be purchased and assembled, as shown in Figure 8. Bypass valves allow you to turn off water to the softener for maintenance if needed, but still have water in house pipes.

Pipe fittings must be 3/4" minimum.

Use:

- Copper pipe
- Threaded pipe
- PEX (Crosslinked Polyethylene) pipe
- CPVC plastic pipe
- Other pipe approved for use with potable water

IMPORTANT: Do not solder with plumbing attached to installation adaptors and single bypass valve. Soldering heat will damage the adaptors and valve.

SINGLE BYPASS VALVE

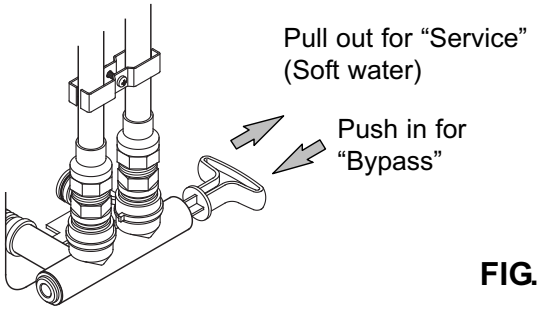


FIG. 7

3 VALVE BYPASS

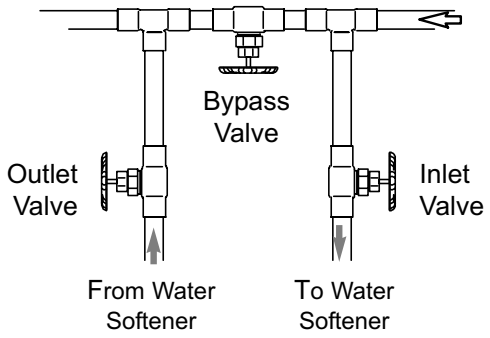
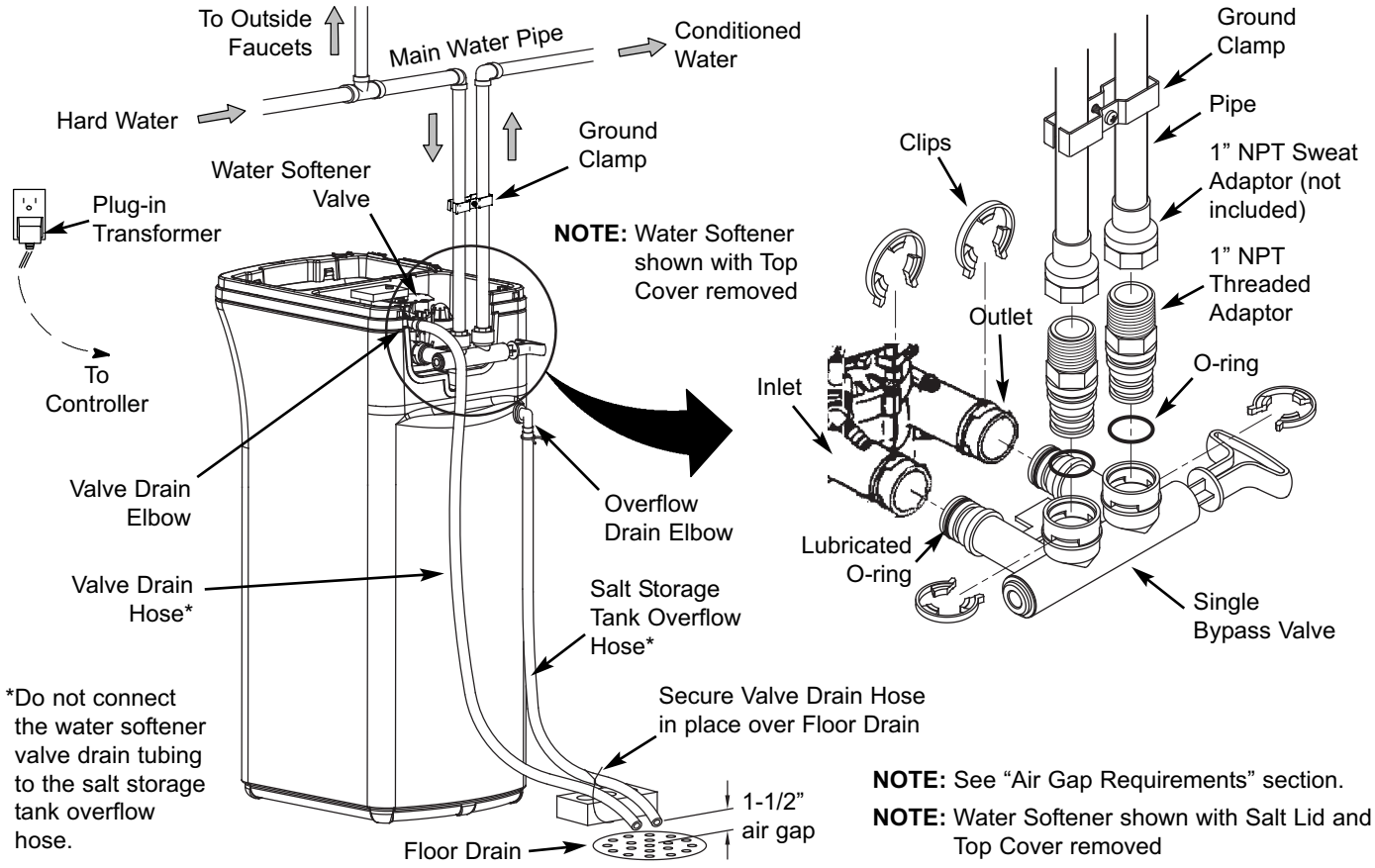


FIG. 8

Installation Instructions

TYPICAL INSTALLATION



NOTE: See "Air Gap Requirements" section.

NOTE: Water Softener shown with Salt Lid and Top Cover removed

FIG. 9

Installation Instructions

TURN OFF WATER SUPPLY

1. Close the main water supply valve, located near the well pump or water meter.

2. Shut off the electric or fuel supply to the water heater.

3. Open all faucets to drain all water from house pipes.

NOTE: Be sure not to drain water from the water heater, as damage to the water heater elements could result.

INSTALL THE BRINE TANK OVERFLOW ELBOW

Install the brine tank overflow grommet and elbow in the 13/16” diameter hole in the back of the salt storage tank sidewall.

NOTE: The brine tank overflow elbow accepts either 1/2” or 3/8” I.D. hose.

MOVE THE WATER SOFTENER INTO PLACE

1. Move the water softener into the desired location. Set it on a solid, level surface.

IMPORTANT: Do not place shims directly under the salt storage tank to level the softener. The weight of the tank, when full of water and salt, may cause the tank to fracture at the shim.

2. Visually check and remove any debris from the water softener valve inlet and outlet ports.

3. Make sure the turbine assembly spins freely in the "out" port of the valve.

4. If not already done, put a light coating of silicone grease on the single bypass valve o-rings.

5. Push the single bypass valve into the softener valve as far as it will go. Snap the two large holding clips into place, from the top down as shown in Figures 11 & 12.

IMPORTANT: Be sure the clips snap firmly into place so the single bypass valve will not pull out.

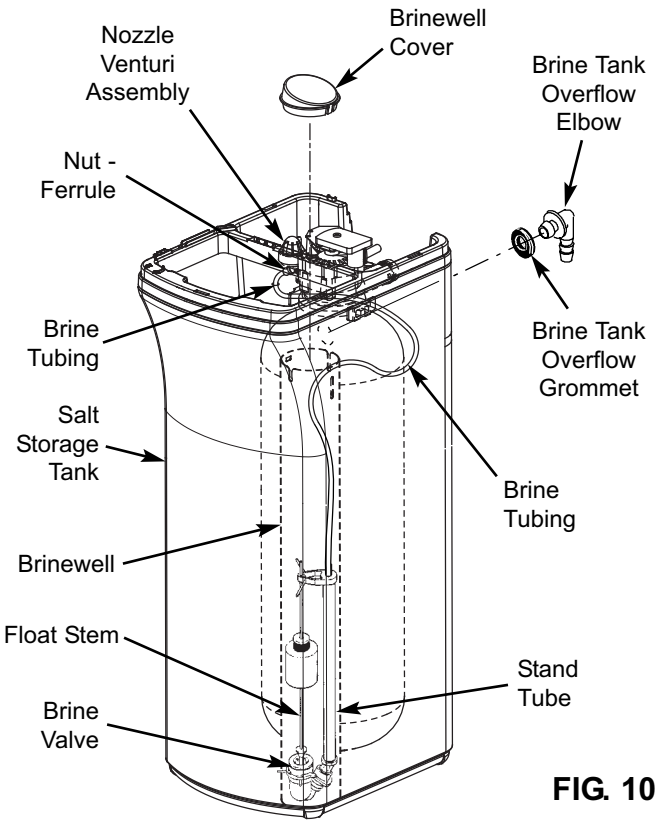


FIG. 10

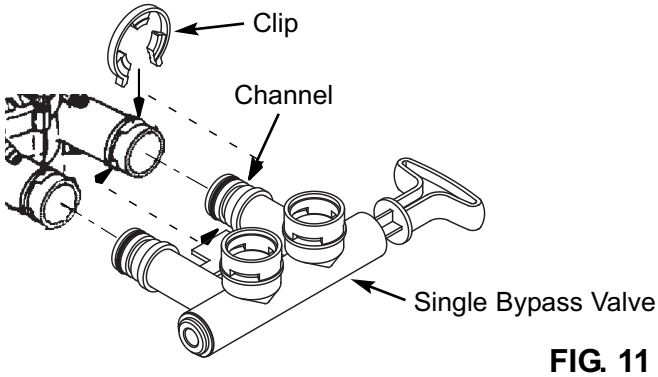


FIG. 11

CORRECT ASSEMBLY

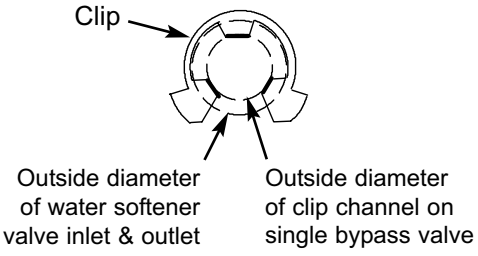


FIG. 12

NOTE: Be sure all 3 tabs of the clip go through the matching holes on the water softener valve inlet or outlet, and fully into the channel on the single bypass valve. Make sure that the tabs are fully seated.

Installation Instructions

COMPLETE INLET AND OUTLET PLUMBING

Measure, cut, and loosely assemble pipe and fittings from the main water pipe to the inlet and outlet ports of the water softener valve. Be sure to keep fittings fully together, and pipes squared and straight.

Be sure hard water supply pipe goes to the water softener valve inlet side.

NOTE: Inlet and outlet are marked on the water softener valve. Trace the water flow direction to be sure hard water is to inlet.

IMPORTANT: Be sure to fit, align and support all plumbing to prevent putting stress on the water softener valve inlet and outlet. Stress from misaligned or unsupported plumbing may cause damage to the valve.

Complete the inlet and outlet plumbing for the type of pipe you will be using.

COLD WATER PIPE GROUNDING

CAUTION: The house cold water pipe (metal only) is often used as a ground for the house electrical system, The 3-valve bypass type of installation, shown in Figure 8, will maintain ground continuity. If you use a plastic bypass valve at the unit, continuity is broken. To restore the ground, do the following:

1. Install the included metal ground clamp across the removed section of main water pipe, securely tightening the hardware at the center (See Figure 13).

NOTE: Check local plumbing and electrical codes for proper installation of the ground wire. The installation must conform to them. In Massachusetts, plumbing codes of Massachusetts shall be conformed to. Consult with your licensed plumber.

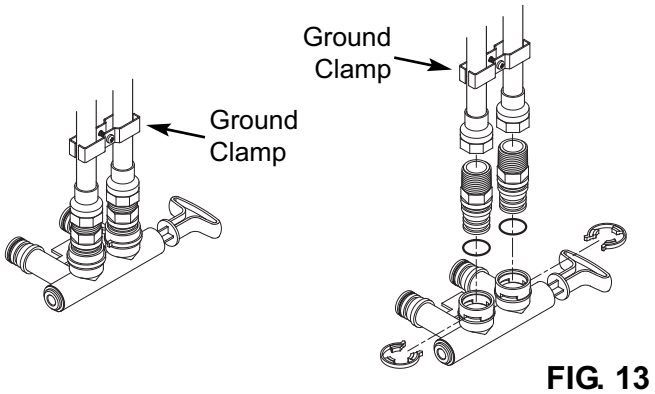


FIG. 13

INSTALL SALT STORAGE TANK OVERFLOW HOSE

1. Measure, cut to needed length and connect the 3/8" drain line (provided) to the salt storage tank overflow elbow and secure in place with a hose clamp.

2 Route the hose to the floor drain, or other suitable drain point no higher than the drain fitting on the salt storage tank (This is a gravity drain). If the tank overfills with water, the excess water flows to the drain point. Cut the drain line to the desired length and route it neatly out of the way.

IMPORTANT: For proper operation of the water softener, do not connect the water softener valve drain tubing to the salt storage tank overflow hose.

TEST FOR LEAKS

To prevent air pressure in the water softener and plumbing system, complete the following steps in order:

1. Fully open two or more softened cold water faucets close to the water softener, located downstream from the water softener.

2. Place the bypass valve (single or 3 valve) into the "bypass" position. See Figures 7 & 8 on Page 7.

3. Slowly open the main water supply valve. Run water until there is a steady flow from the opened faucets, with no air bubbles.

4. Place bypass valve(s) in "service" or soft water position as follows:

- Single bypass valve: Slowly move the valve stem toward "service," pausing several times to allow the water softener to fill with water.
- 3 valve bypass: Fully close the bypass valve and open the outlet valve. Slowly open the inlet valve, pausing several times to allow the water softener to fill with water.

5. After about three minutes, open a hot water faucet until there is a steady flow and there are no air bubbles, then close this faucet.

6. Close all cold water faucets and check for leaks at the plumbing connections that you made.

7. Check for leaks around clips at softener's inlet and outlet. If a leak occurs at a clip, depressurize the plumbing (turn off the water supply and open faucets) before removing clip. When removing clips at the softener's inlet or outlet, push the single bypass valve body toward the softener (See Figure 14). Improper removal may damage clips. Do not reinstall damaged clips.

Installation Instructions

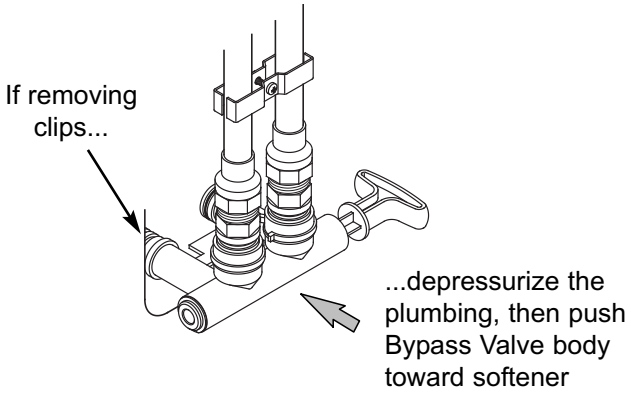


FIG. 14

ADD WATER AND SALT TO THE SALT STORAGE TANK

1. Using a container, add about three gallons of clean water into the salt storage tank.

2. Add salt to the storage tank. Use nugget, pellet or coarse solar salts with less than 1% impurities.

PLUG IN THE WATER SOFTENER

During installation, the water softener wiring may be moved or jostled from place. Be sure all leadwire connectors are secure on the back of the electronic board and be sure all wiring is away from the valve gear and motor area, which rotates during regenerations.

1. Plug the water softener into an electrical outlet that is not controlled by a switch.

NOTE: The water heater is filled with hard water and, as hot water is used, it will refill with conditioned water. In a few days, the hot water will be fully conditioned. To have fully conditioned hot water immediately, wait until the initial recharge is over. Then, drain the water heater (following instructions for water heater) until water runs cold.

PROGRAM THE CONTROLLER

1. Complete the Programming Steps on Pages 12 & 13.

SANITIZE THE WATER SOFTENER / SANITIZE AFTER SERVICE

Care is taken at the factory to keep your unit clean and sanitary. Materials used to make the unit will not infect or contaminate your water supply, and will not cause bacteria to form or grow. However, during shipping, storage, installation and operation, bacteria could get into the unit. For this reason, sanitizing as follows is suggested* when installing.

1. Slide open the salt lid, remove the brinewell cover and pour about 3 oz. (6 tablespoons) of household bleach into the softener brinewell. Replace the brinewell cover.

2 Make sure the bypass valve(s) is in the “service” (open) position.

3 Start a recharge: Press the RECHARGE button and hold for 3 seconds, until “Recharge Now” begins to flash in the display. This recharge draws the sanitizing bleach into and through the water softener. Any air remaining in the unit is purged to the drain.

4. After the recharge has completed, fully open a cold water faucet, downstream from the softener, and allow 50 gallons of water to pass through the system. This should take at least 20 minutes. Close the faucet.

*Recommended by the Water Quality Association. On some water supplies, the unit may need periodic disinfecting.

RESTART THE WATER HEATER

1. Turn on the electricity or fuel supply to the water heater and relight the pilot, if applicable.

NOTE: The water heater is filled with hard water and, as hot water is used, it refills with conditioned water. In a few days, the hot water will be fully conditioned. To have fully conditioned hot water immediately, wait until the initial recharge (previous step) is over. Then, drain the water heater (following instructions for water heater) until water runs cold.

Questions? Call Toll Free 1-800-693-1138 Monday- Friday, 7 AM - 6 PM CST
or visit www.ecopurewaterproducts.com

When you call, please be prepared to provide the model and serial number, found on the rating decal, typically located on the rim below the salt lid hinges.

Programming the Water Softener

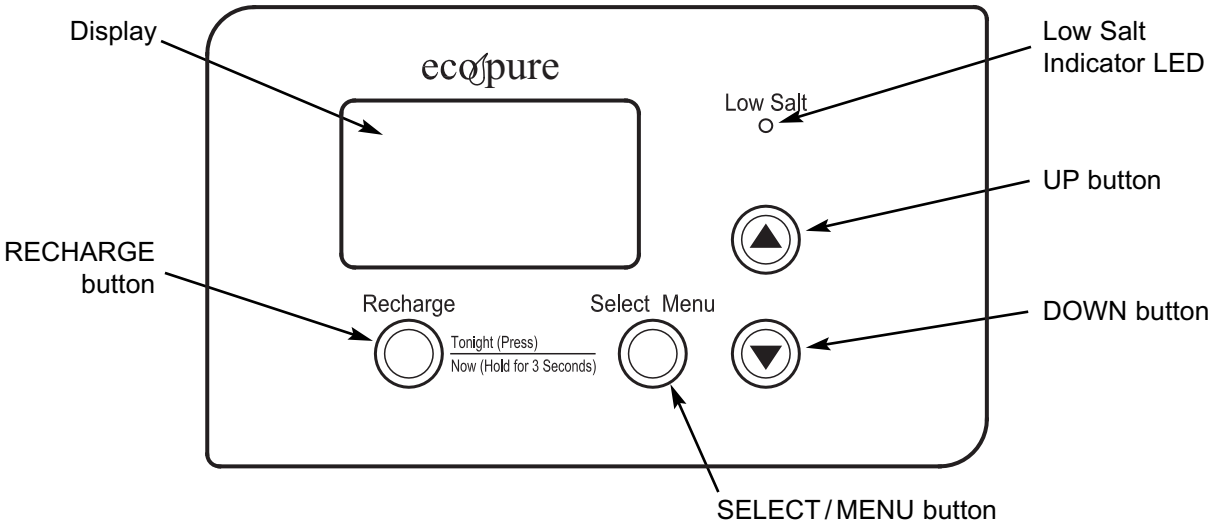


FIG. 15

When the transformer is plugged into the electrical outlet, a model code and a test number (example: J2.0), begin to flash in the faceplate display. Then, “12:00 PM” and the words “SET TIME" begin to flash.

NOTE: If “- - - -” shows in the display, press the △ UP or ▽ DOWN button until the model code (“E7130” for Model EP 7130 or “E7140” for Model EP 7140) shows in the display. Then, press the SELECT / MENU button to set, and change to the flashing “SET TIME" display.

SET TIME OF DAY

If the words “SET TIME" do not show in the display, press the SELECT / MENU button until they do.

1. Press the △ UP or ▽ DOWN buttons to set the present time. Up moves the display ahead; down sets the time back. Be sure AM or PM is correct.

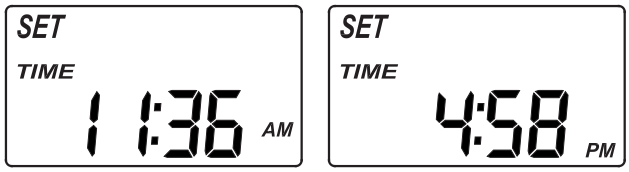


FIG. 16

NOTE: Press buttons and quickly release to slowly advance the display. Hold the buttons down for fast advance.

SET WATER HARDNESS NUMBER

1. Press the SELECT / MENU button once again to display a flashing “25” and the words “SET HARDNESS”.

FIG. 17

2. Press the △ UP or ▽ DOWN buttons to set your water’s hardness number.

NOTE: If your water supply contains iron, compensate for it by adding to the water hardness number. For example, assume your water is 20 gpg hard and contains 2 ppm iron. Add 5 to the hardness number for each 1 ppm of iron. In this example, you would use 30 for your hardness number.

	20 gpg hardness
2 ppm iron x 5 = 10	+10
(times)	30 HARDNESS NUMBER

NOTE: If you use potassium chloride (KCl) salt instead of sodium chloride (NaCl) salt in this softener, increase the hardness setting by 25%. For example, if you will be using KCl and your water supply’s hardness is 20 gpg, set the softener to 25 gpg.

Programming the Water Softener

SET RECHARGE (REGENERATION) TIME

1. Press the SELECT / MENU button once again to display a flashing “2:00AM” and the words “SET RECHARGE TIME”. This is a good time for the recharge to start in most households, because water is not in use.

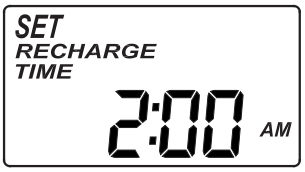


FIG. 18

2. If you want to change the recharge start time, press the △ UP or ▽ DOWN buttons until the desired time shows. Be sure AM or PM is correct.

SET SALT LEVEL

The water softener has a low salt indicator light to remind you to refill the storage tank with salt.

NOTE: You must set salt level each time salt is added to the water softener.

To set this monitor system:

1. Slide open the salt lid and level the salt in the storage tank.

2. The salt level decal, on the brinewell inside the tank, has numbers from 0 to 8. Observe the highest number the leveled salt is at, or closest to.

3. Press the SELECT / MENU button to display a flashing “OFF” and the words “SET SALT LEVEL”.

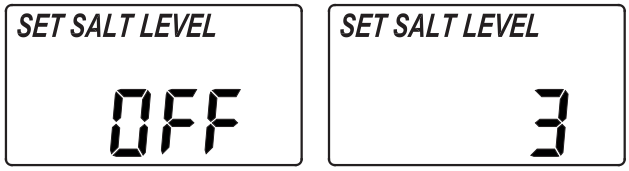


FIG. 19

4. Press the △ UP button until the number on the screen corresponds to the salt level. At level 2 or below, the “Low Salt" LED indicator will flash. If you wish to turn this feature off, press the ▽ DOWN button past 0, and the word “OFF” flashes in the display.

5. Press the SELECT / MENU button once more to complete the initial programming. The current time of day will show in the display.

FIG. 20

Customizing Features / Options

RECHARGE NOW

At times of greater than normal water use, such as when you have guests, you could run out of conditioned water before the next scheduled recharge. If this happens, you may want to initiate an immediate regeneration, as follows:

1. Press and hold the RECHARGE button until the words “RECHARGE NOW" flash in the display.

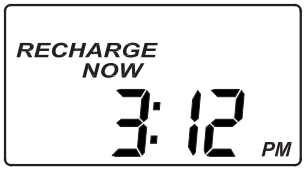


FIG. 21

RECHARGE NOW initiated

The softener enters the fill cycle of regeneration right away. “RECHARGE NOW” will flash during the regeneration. When completed (in about 2 hours), full water conditioning capacity is restored.

NOTE: Avoid using hot water while the softener is regenerating, because the water heater will refill with bypass hard water.

RECHARGE TONIGHT

If you do not want to start an immediate recharge, but would like an extra recharge at the next preset recharge time, do the following to schedule a recharge:

1. Press and release (do not hold) the RECHARGE button.

FIG. 22

RECHARGE TONIGHT initiated

The words “RECHARGE TONIGHT" flash in the display, and the softener will recharge at the next preset recharge time (If you decide to cancel the regeneration before it begins, press and release the RECHARGE button once more, and “RECHARGE TONIGHT” will disappear from the display). During regeneration, the word “RECHARGE NOW" will flash in the screen. When completed, full water conditioning capacity is restored.

POWER OUTAGE MEMORY

If electrical power to the water softener is lost, “memory" built into the timer circuitry will keep all settings for several hours. While the power is out, the display is blank and the water softener will not regenerate. When electrical power is restored, the following will occur.

You have to reset the present time only if the display is flashing. The HARDNESS and RECHARGE TIME never require resetting unless a change is desired. Even if the clock is incorrect after a long power outage, the softener operates as it should to keep your water soft. However, regenerations may occur at the wrong time of day until you reset the clock to the correct time of day.

NOTE: If the water softener was regenerating when power was lost, it will now finish the cycle.

Customizing Features / Options

SALT EFFICIENCY

When this feature is ON, the water softener will operate at salt efficiencies of 4000 grains of hardness per pound of salt or higher (May recharge more often using smaller salt dosage and less water). The softener is shipped with this feature set OFF.

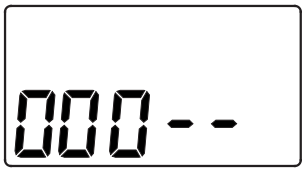


FIG. 23

1. Press and hold the SELECT / MENU button until the screen in Figure 23 is displayed. Once in this display, press the SELECT / MENU button once and one of the two displays in Figure 24 is shown.

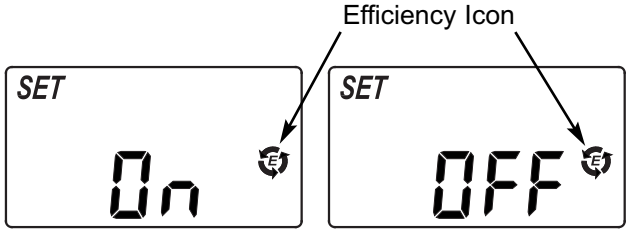


FIG. 24

2. Press the △ UP or ▽ DOWN buttons to set ON or OFF. When set to ON, the efficiency icon will be displayed along the right side of the normal run display.

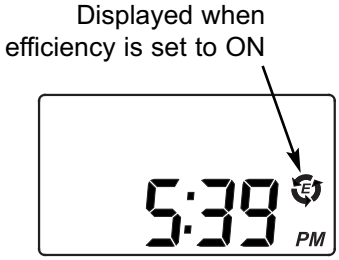


FIG. 25

CALIFORNIA EFFICIENCY REQUIREMENT

Your EcoPure Water Softener has a “High Efficiency” feature with an ON or OFF setting. This softener setting is shipped in the OFF position, which utilizes the maximum rated capacity while most often achieving maximum salt efficiencies. When installing this unit in the State of California, you MUST turn this setting to the ON position, which may initiate more frequent recharges. However it will operate at 4000 grains per pound of salt or higher.

If you wish to turn the Salt Efficiency feature ON (icon will show in the display), follow the instructions on this page.

Questions? Call Toll Free 1-800-693-1138 Monday- Friday, 7 AM - 6 PM CST
or visit www.ecopurwaterproducts.com

When you call, please be prepared to provide the model and serial number, found on the rating decal, typically located on the rim below the salt lid hinges.

Routine Maintenance

ADDING SALT

Slide open the salt lid and check the salt storage level frequently. If the water softener uses all the salt before you refill it, you will experience hard water. Until you have established a refilling routine, check the salt every two or three weeks. Always add if less than 1/4 full. Be sure the brinewell cover is on.

NOTE: In humid areas, it is best to keep the salt storage level lower, and to refill more often to avoid salt "bridging".

Recommended Salt: Nugget, pellet or coarse solar salts with less than 1% impurities.

Salt Not Recommended: Rock salt, high in impurities, block, granulated, table, ice melting, ice cream making salts, etc.

BREAKING A SALT BRIDGE

Sometimes, a hard crust or salt "bridge" forms in the brine tank. It is usually caused by high humidity or the wrong kind of salt. When the salt "bridges," an empty space forms between the water and the salt. Then, salt will not dissolve in the water to make brine. Without brine, the resin bed is not recharged and hard water will result.

If the storage tank is full of salt, it is difficult to tell if you have a salt bridge. A bridge may be underneath loose salt. Take a broom handle, or like tool, and hold it next to the water softener. Measure the distance from the floor to the rim of the water softener. Then, gently push the broom handle straight down into the salt. If a hard object is felt before the pencil mark is even with the top, it is most likely a salt bridge. Gently push into the bridge in several places to break it. Do not use any sharp or pointed objects as you may puncture the brine tank. Do not try to break the salt bridge by pounding on the outside of the salt tank. You may damage the tank.

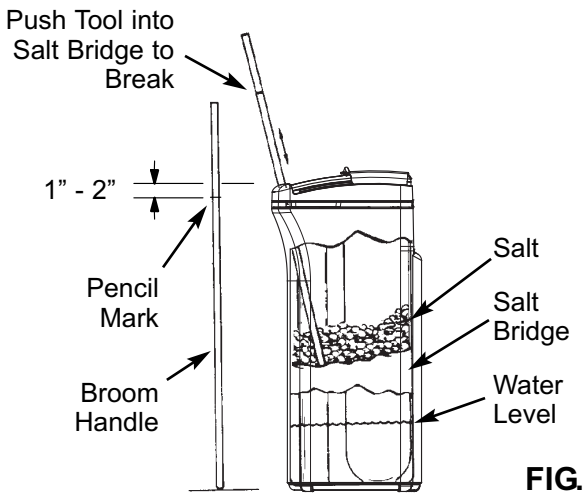
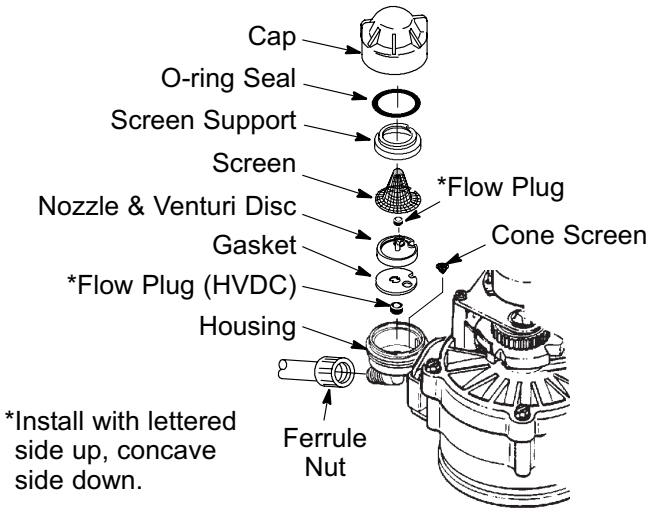


FIG. 26

CLEANING THE NOZZLE & VENTURI

A clean nozzle & venturi (See Figure 27) is a necessity for the water softener to work properly. This small component creates the suction to move brine from the brine tank, into the resin tank. If it should become plugged with sand, silt, dirt, etc., the water softener will not work, and hard water will result.



IMPORTANT: Be sure small hole in the gasket is centered directly over the small hole in the nozzle & venturi housing. Be sure the numbers are facing up

FIG. 27

To get access to the nozzle & venturi, remove the water softener's top cover. Put the bypass valve(s) into the bypass position. Be sure the water softener is in soft water (service) cycle (no water pressure at nozzle & venturi). Then, holding the nozzle & venturi housing with one hand, unscrew the cap. Do not lose the o-ring seal. Lift out the screen support and screen. Then, remove the nozzle & venturi disc, gasket and flow plug(s). Wash the parts in warm, soapy water and rinse in fresh water. Be sure to clean both the top and bottom of the nozzle & venturi disc. If needed, use a small brush to remove iron or dirt. Do not scratch, misshape, etc., surfaces of the nozzle & venturi.

Gently replace all parts in the correct order. Lubricate the o-ring seal with silicone grease and locate in place. Install and tighten the cap by hand, while supporting the housing. Overtightening may break the cap or housing. Put the bypass valve(s) into service (soft water) position.

Recharge the softener to reduce water level in the tank. This will also assure that the softener is completely recharged and ready to provide softened water again. Check the water level in the tank by looking down the brinewell. If the water level does not drop after a recharge, the problem has not been resolved. Call 1-800-693-1138, Monday - Friday, 7 am to 6 pm, CST.

Routine Maintenance

PROTECT THE WATER SOFTENER FROM FREEZING

If the softener is installed where it could freeze (summer cabin, lake home, etc.), you must drain all water from it to stop possible freeze damage. To drain the softener:

1. Close the shut-off valve on the house main water pipe, near the water meter or pressure tank.

2. Open a faucet in the soft water pipes to vent pressure in the softener.

3. Move the stem in the single bypass valve to bypass. Close the inlet and outlet valve in a 3 valve bypass system, and open the bypass valve. If you want water in the house pipes again, reopen the shut-off valve on the main water pipe.

4. Unplug the transformer at the wall outlet. Slide open the salt lid and remove the softener's top cover. Take off both drain hoses if they will interfere with moving the softener into position over the drain.

5. Carefully remove the large holding clips at the softener inlet and outlet. Separate the softener from the plastic installation adaptors, or from the bypass valve.

6. Lay a piece of 2 inch thick board near the floor drain (See Figure 28).

7. Move the softener close to the drain. Slowly and gently, tip it over until the rim rests on the wood block with the inlet and outlet over the drain. Do not allow the softener's weight to rest on the inlet and outlet fittings or they may break.

8. Tip the bottom of the softener up a few inches and hold until all water has drained. Leave the softener laying like this until you are ready to use it. Plug the inlet and outlet with clean rags to keep dirt, bugs, etc. out.

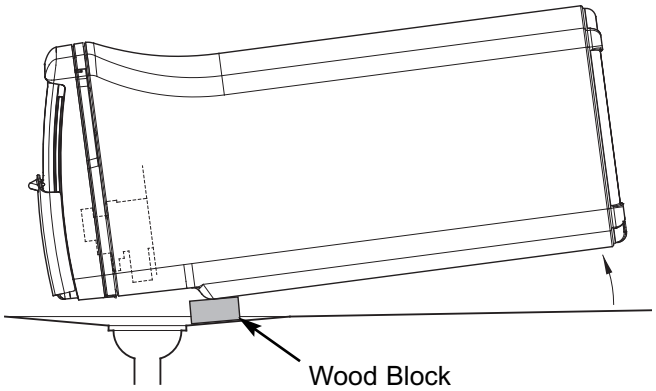


FIG. 28

Troubleshooting Guide

PROBLEM	CAUSE	CORRECTION
No soft water	1. No salt in the storage tank.	Refill with salt and then use RECHARGE NOW feature.
No soft water & display is blank	1. Transformer unplugged at wall outlet, or power cable disconnected from back of electronic board or transformer malfunction.	Check for loss of power and correct. Reset electronic controls and then use RECHARGE NOW feature.
	2. Fuse blown, circuit breaker popped, or circuit switched off (See "Power Outage Memory" on Page 14).	Replace fuse, reset circuit breaker, or switch circuit on, and then use RECHARGE NOW feature.
	3. Electronic control board malfunction.	Replace electronic control board (See Page 23).
No soft water & salt level not dropping	1. Salt storage tank "bridged".	Refer to "Breaking a Salt Bridge" section to break.
	2. Bypass valve(s) in "bypass" position.	Move bypass valve(s) to "service" position.
No soft water & salt storage tank full of water, water running to drain while unit is in the soft water cycle	1. Dirty, plugged or damaged nozzle & venturi assembly	Take apart, clean and inspect nozzle & venturi (See "Cleaning the Nozzle & Venturi" section.
	2. Inner valve fault causing leak.	Replace seals and rotor.
	3. Valve drain hose is plugged.	Hose must not have any kinks, sharp bends or any water flow blockage (See "Valve Drain Requirements" section.
	4. Valve drain line and Salt Storage Tank overflow drain connected together by a tee.	Disconnect tee and run separate drain lines.
	5. Low or high system water pressure (low pressure may disrupt brine draw during recharge, high pressure may cause inner valve parts failure).	If pressure is low, increase well pump output to a minimum 20 psi. If daytime pressure is over 100 psi, add a pressure reducing valve in the supply pipe to the softener. Contact a licensed plumber.
	6. Brine float dirty or broken.	Clean or replace Brine Valve Float Assembly.*
	7. Leak between valve and resin tank.	Replace o-rings between resin tank and valve.
Water hard sometimes	1. Incorrect time set.	Check and change time setting.
	2. Incorrect water hardness set.	Refer to "Set Water Hardness" section to set correctly.
	3. Incorrect model code programmed.	Refer to "Program the Water Softener" section to set correctly.
	4. Hot water being used when softener is regenerating.	Avoid using hot water while the softener is regenerating, as the water heater will fill with hard water.
	5. Possible increase in water hardness.	Test untreated water for hardness and iron, and program the water softener accordingly (See "Set Water Hardness") section to set.
	6. Leaking faucet or toilet valve. Excessive water usage.	A small leak can waste hundreds of gallons of water in a few days. Fix all leaks and always fully close faucets.
Iron in water	1. Clear water iron in water supply.	Test untreated water for hardness and iron, and program the water softener accordingly (See "Set Water Hardness") section to set.
	2. Iron in soft water.	Clean resin bed with Resin Bed Cleaner. Follow instructions on package.
	3. Bacterial or organic bound iron.	Cannot be treated by water softener.
Resin in household plumbing	1. Crack in distributor or riser tube.	Replace resin tank assembly.
Salt storage tank leaking	1. Crack in brine tank.	Replace salt storage tank assembly.
Motor stalled or clicking	1. Motor malfunction or internal valve fault causing high torque on motor.	a. Replace rotor/seal. b. Replace motor & switch.
Error code E1, E3 or E4 appears	1. Fault in wiring harness or connections to position switch.	Replace wiring harness or connections to position switch.
	2. Fault in switch.	Replace switch.
	3. Fault in valve causing high torque.	Replace rotor/seal.
	4. Motor inoperative.	Replace motor.
Error code E5	1. Electronic control malfunction.	Replace electronic control board.

Troubleshooting

AUTOMATIC ELECTRONIC DIAGNOSTICS

This water softener has a self-diagnostic function for the electrical system (except input power and/or water meter). The water softener monitors electronic components and circuits for correct operation. If a malfunction occurs, an error code appears in the display.

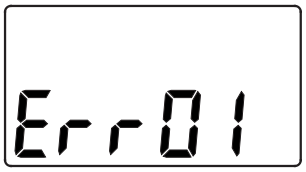


FIG. 29

The troubleshooting chart shows the error codes that could appear, and the possible malfunctions for each code.

While an error code appears in the display, all buttons are inoperable except the SELECT / MENU button. SELECT / MENU remains operational so the service person can perform the Manual Advance Diagnostics, see below, to further isolate the problem.

Procedure for removing error code from display:

1. Unplug transformer from electrical outlet.
2. Correct problem.
3. Plug in transformer.
4. Wait 8 minutes. The error code will return if the problem was not corrected.

MANUAL ADVANCE DIAGNOSTICS

Use the following procedures to advance the water softener through the regeneration cycles to check operation.

Slide open the salt lid and remove the softener's top cover to observe cam and switch operation during valve rotation.

1. Press and hold SELECT / MENU for 3 seconds until "000" shows in the display, then release.
2. The 3 digits indicate water meter operation as follows:

   000 (steady) = Soft water not in use, and no flow through the meter.

   Open a nearby soft water faucet.

   Model EP 7130: 000 to 199 (continual) = Repeats for each gallon of water passing through the meter.

   Model EP 7140: 000 to 140 (continual) = Repeats for each gallon of water passing through the meter.

NOTE: If you don't get a reading in the display with faucet open, pull the sensor from the valve outlet port. Pass a small magnet back and forth in front of the sensor. If you get a reading in the display with the magnet, unhook the in and out plumbing and check the turbine for binding (See Figure 30).

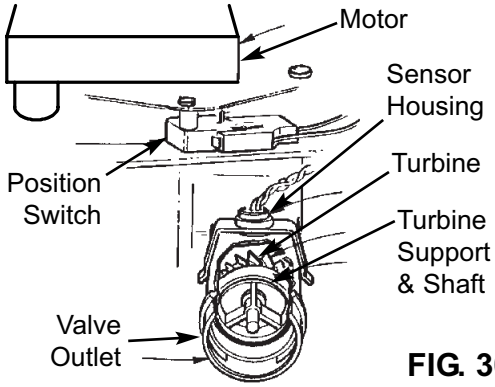


FIG. 30

3. The letter "P" and a dash (or dashes) indicate POSITION switch operation (See Figure 31). If the letter appears, the switch is closed. If the dash shows, the switch is open.

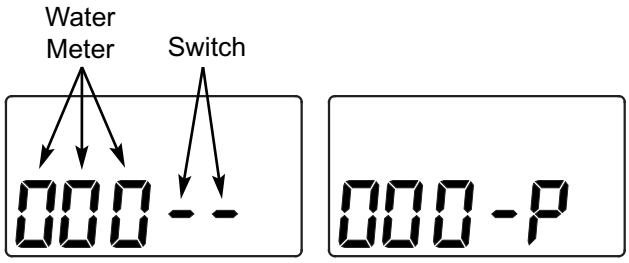


FIG. 31

4. Use the RECHARGE button to manually advance the valve into each cycle and check correct switch operation.

NOTE: Be sure water is in contact with the salt, and not separated by a salt bridge (See "Breaking A Salt Bridge" section).

5. While in this diagnostic screen, the following information is available and may be beneficial for various reasons. This information is retained by the computer from the first time electrical power is applied to the electronic controller.

   a. Press the △ UP button to display the number of days this electronic control has had electrical power applied.

   b. Press the ▽ DOWN button to display the number of regenerations initiated by this electronic control since the code number was entered.

continued

Troubleshooting

6. Press and hold the SELECT / MENU button until the model code (“E7130” for Model EP 7130 or “E7140” for Model EP 7140) shows in the display. This code identifies the softener model. If an incorrect model code is displayed, the softener will operate on incorrect configuration data.

7. To change the code number, press the △ UP or ▽ DOWN button until the correct code shows.

8. To return to the present time display, press the SELECT / MENU button.

RESETTING TO FACTORY DEFAULTS

To reset the electronic controller to its factory default for all settings (time, hardness, etc.):

1. Press the SELECT/MENU button and hold it until the display changes twice to show “SET CODE” and the flashing model code.

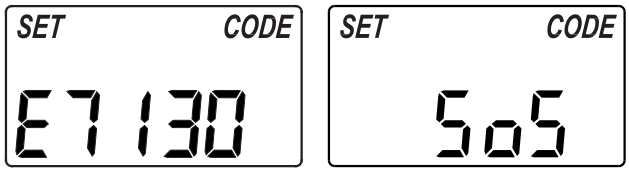


FIG. 32

2. Press the △ UP button (a few times, if necessary) to display a flashing “SoS”.

3. Press the SELECT/MENU button, and the electronic controller will restart.

4. Set the present time, hardness, etc., as described on pages 12 & 13.

MANUAL ADVANCE REGENERATION CHECK

This check verifies proper operation of the valve motor, brine tank fill, brine draw, regeneration flow rates, and other controller functions. Always make the initial checks, and the manual initiated diagnostics.

NOTE: The electronic control display must show a steady time (not flashing). If an error code shows, first press the SELECT / MENU button to enter the diagnostic display.

1. Press the RECHARGE button and hold in for 3 seconds. RECHARGE begins to flash as the softener enters the fill cycle of regeneration. Remove the brinewell cover and, using a flashlight, observe fill water entering the tank.

If water does not enter the tank, look for an obstructed nozzle, venturi, fill flow plug, brine tubing, or brine valve riser pipe.

2. After observing fill, press the RECHARGE button to move the softener into brining. A slow flow of water to the drain will begin. Verify brine draw from the brine tank by shining a flashlight into the brinewell and observing a noticeable drop in the liquid level. This may take 15 to 20 minutes to notice.

NOTE: Be sure water is in contact with the salt, and not separated by a salt bridge (See "Breaking A Salt Bridge" section).

If the water softener does not draw brine, check for (most likely to least likely):

- Dirty or plugged nozzle and venturi, see "Cleaning the Nozzle and Venturi" section
- Nozzle and venturi not seated on the gasket, or gasket deformed
- Restriction in valve drain, causing a back-pressure (bends, kinks, elevated too high, etc.). See "Install Valve Drain Hose" section.
- Obstruction in brine valve or brine tubing
- Inner valve failure (obstructed outlet disc, wave washer deformed, etc.)

NOTE: If water system pressure is low, an elevated drain hose may cause back pressure, stopping brine draw.

3. Again, press the RECHARGE button to move the softener into backwash. Look for a fast flow of water from the drain hose.

An obstructed flow indicates a plugged top distributor, backwash flow plug, or drain hose.

4. Press the RECHARGE button to move the softener into fast rinse. Again look for a fast drain flow. Allow the softener to rinse for a few minutes to flush out any brine that may remain in the resin tank from the brining cycle test.

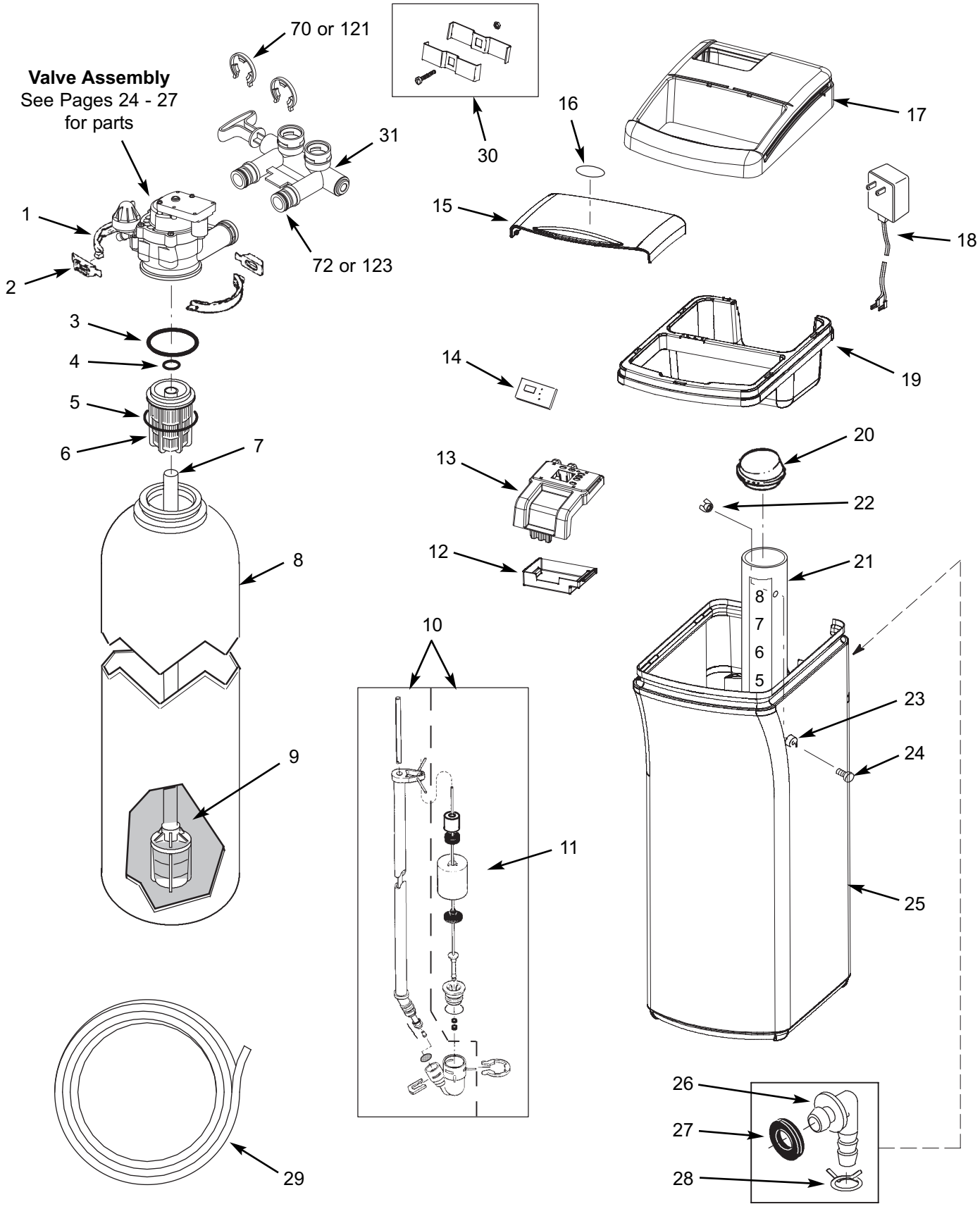
5. To return the softener to service, press the RECHARGE button.

Need help troubleshooting? Call Toll Free 1-800-693-1138 Monday- Friday, 7 AM - 6 PM CST
or visit www.ecopurewaterproducts.com

When you call, please be prepared to provide the model and serial number, found on the rating decal, typically located on the rim below the salt lid hinges.

Notes

Softener Exploded View
(Models EP 7130 & EP 7140)



Softener Parts List

(Models EP 7130 & EP 7140, as listed below)

Key No.	Part No.	Description
–	7331177	Tank Neck Clamp Kit (includes 2 ea. of Key Nos. 1 & 2)
1	↑	Clamp Section (2 req.)
2	↑	Retainer Clip (2 req.)
–	7112963	Distributor O-Ring Kit (includes Key Nos. 3-5)
3	↑	O-Ring, 2-7/8" x 3-1/4"
4	↑	O-Ring, 13/16" x 1-1/16"
5	↑	O-Ring, 2-3/4" x 3"
6	7077870	Top Distributor
7	7105047	Repl. Bottom Distributor
8	7328904	Repl. Resin Tank, 9" x 35", Model EP 7130
	7113066	Repl. Resin Tank, 10" x 35", Model EP 7140
9	0502272	Resin, 1 cu. ft.
10	7310202	Repl. Brine Valve Assembly
11	7327568	Float, Stem & Guide Assembly
12	7269930	Electronics Enclosure, Rear
13	7281089	Faceplate (order decal below)
■	7303158	Faceplate Decal
14	7303221	Repl. Electronic Control Board (PWA)
15	7269914	Salt Lid
16	7303077	EcoPure Badge
17	7294707	Top Cover

Key No.	Part No.	Description
18	7275907	Transformer
19	7295046	Rim (order decal below)
■	7302932	Instruction Decal
20	7155115	Brinewell Cover
21	7137824	Brinewell
–	7331672	Brinewell Mounting Hardware Kit (includes Key Nos. 22-24)
22	↑	Wing Nut, 1/4-20
23	↑	Spacer, Brinewell
24	↑	Screw, 1/4-20 x 1"
25	7311169	Repl. Brine Tank, Model EP 7130
	7295567	Repl. Brine Tank, Model EP 7140
–	7331258	Overflow Hose Adaptor Kit (includes Key Nos. 26-28)
26	↑	Adaptor Elbow
27	↑	Grommet
28	↑	Hose Clamp
29	7139999	Drain Hose, 20 ft.
30	7248706	Ground Clamp Kit
31	7278434	Bypass Valve Assembly, 3/4", Model EP 7130, including 2 O-Rings (See Key No. 72)
	7214383	Bypass Valve Assembly, 1", Model EP 7140, including 2 ea.of Clips & O-Rings (See Key Nos. 121 & 123)
■	7339913	Owner's Manual

■ Not illustrated.

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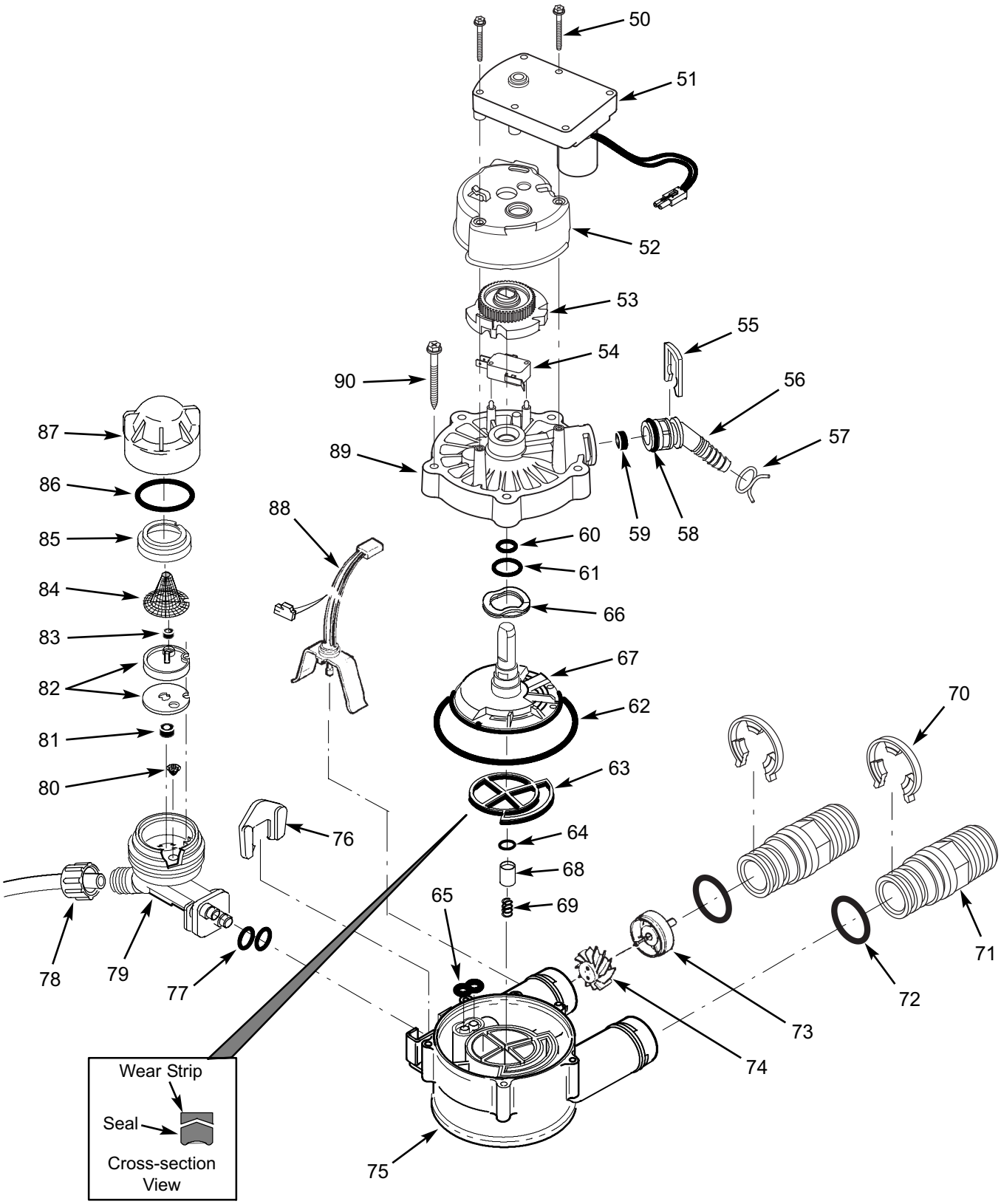
Valve Exploded View



Valve Parts List (Model EP 7130)

Key No.	Part No.	Description
50	7338111	Screw, #6-19 x 1-3/8” (2 req.)
51	7281291	Motor
52	7337474	Motor Mount
53	7284964	Cam & Gear
54	7030713	Switch
–	7331185	Drain Hose Adaptor Kit (includes Key Nos. 55-59)
55	↑	Clip, Drain
56	↑	Drain Hose Adaptor
57	↑	Hose Clamp
58	↑	O-Ring, 5/8” x 13/16”
59	↑	Flow Plug, 2.0 gpm
–	7129716	Seal Kit (includes Key Nos. 60-65)
60	↑	O-Ring, 7/16” x 5/8”
61	↑	O-Ring, 3/4” x 15/16”
62	↑	O-Ring, 3-3/8” x 3-5/8”
63	↑	Rotor Seal
64	↑	O-Ring, 3/8” x 9/16”
65	↑	Seal, Nozzle & Venturi
66	7082087	Wave Washer
67	7199232	Rotor & Disc
68	7092642	Plug, Drain Seal
69	7129889	Spring
70	7337563	Clip, 3/4”, pack of 4
71	7278442	Installation Adaptor, 3/4” (2 req.), including O-Ring (See Key No. 72)

Key No.	Part No.	Description
72	7337571	O-Ring, 15/16” x 1-3/16”, pack of 4
–	7113040	Turbine & Support Assembly, including 2 O-Rings (See Key No. 72) & 1 ea. of Key Nos. 73 & 74
73	↑	Turbine Support & Shaft
74	↑	Turbine
75	7082053	Valve Body
76	7081201	Retainer, Nozzle & Venturi
77	7170319	O-Ring, 1/4” x 3/8” (2 req.)
78	1202600	Nut - Ferrule
–	7187065	Nozzle & Venturi Assembly (incl. Key Nos. 79-87)
79	7081104	Housing, Nozzle & Venturi
80	7095030	Cone Screen
81	1148800	Flow Plug, .3 gpm
82	7187772	Nozzle & Venturi Gasket Kit
	7204362	Gasket Only
83	0521829	Flow Plug, .1 gpm
84	7146043	Screen
85	7167659	Screen Support
86	7170262	O-Ring, 1-1/8” x 1-3/8”
87	7199729	Cap
88	7309803	Wire Harness, Sensor
89	7337466	Valve Cover
90	7074123	Screw, #10-14 x 2” (5 req.)

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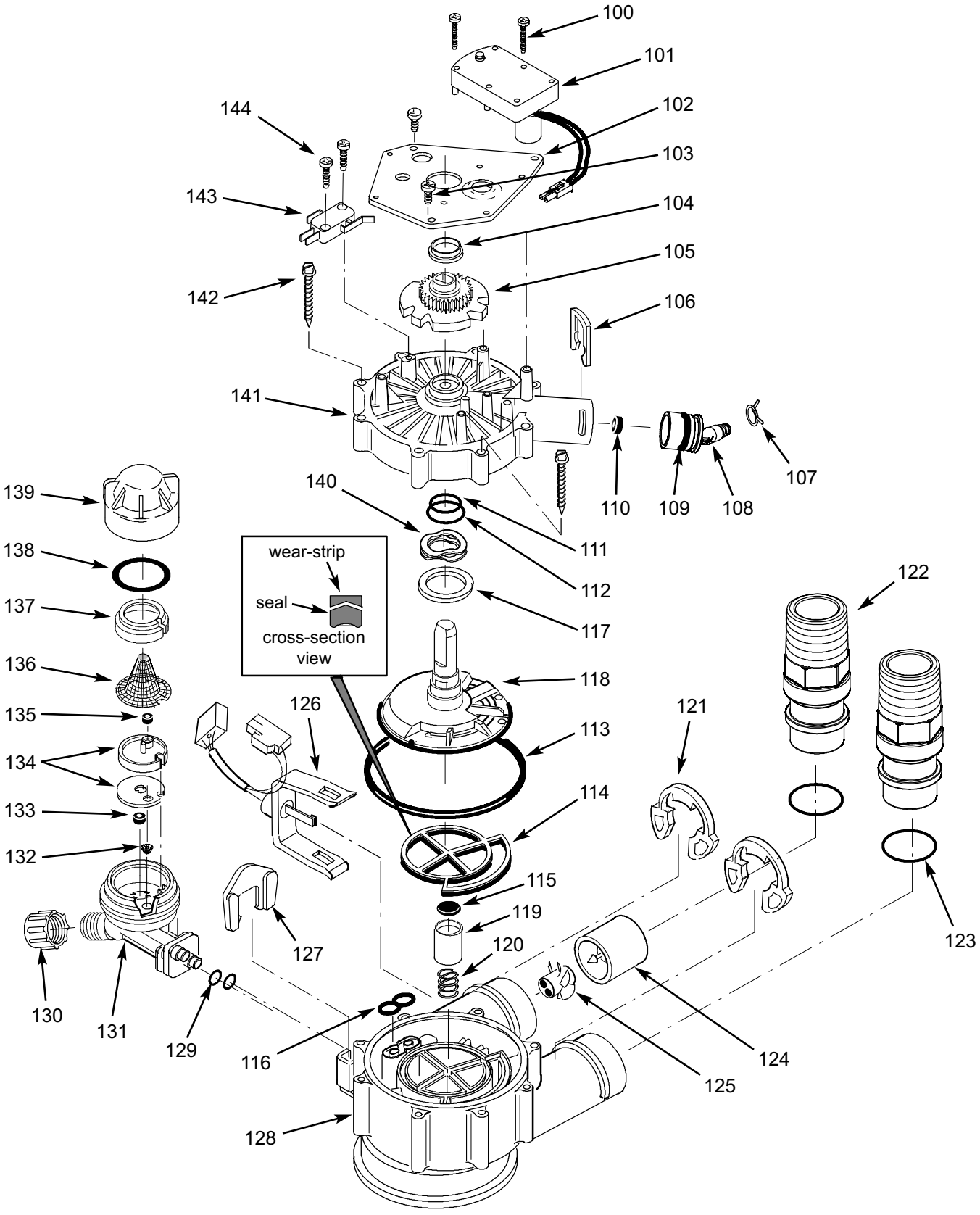
Valve Exploded View (Model EP 7140)



Valve Parts List (Model EP 7140)

Key No.	Part No.	Description
100	7224087	Screw, #8-32 x 1” (2 req.)
101	7286039	Motor (incl. 2 ea. of Key No. 100)
102	7231393	Motor Plate
103	0900857	Screw, #6-20 x 3/8” (3 req.)
104	7171250	Bearing
105	7283489	Cam & Gear
–	7331169	Drain Hose Adaptor Kit (includes Key Nos. 106-110)
106	↑	Clip, Drain
107	↑	Hose Clamp
108	↑	Drain Hose Adaptor
109	↑	O-Ring, 15/16” x 1-3/16”
110	↑	Flow Plug, 2.0 gpm
–	7185487	Seal Kit (includes Key Nos. 111-116)
111	↑	O-Ring, 5/8” x 13/16”
112	↑	O-Ring, 1-1/8” x 1-1/2”
113	↑	O-Ring, 4-1/2” x 4-7/8”
114	↑	Rotor Seal
115	↑	Seal
116	↑	Seal, Nozzle & Venturi
117	7174313	Bearing, Wave Washer
118	7185500	Rotor & Disc
119	7171187	Plug, Drain Seal
120	7129889	Spring
121	7337589	Clip, 1”, pack of 4
122	7271204	Installation Adaptor, 1” (2 req.)
123	7337597	O-Ring, 1-1/16” x 1-5/16”, pack of 4

Key No.	Part No.	Description
–	7290931	Turbine & Support Assembly, including 2 O-Rings (See Key No. 123) & 1 ea. of Key Nos. 124 & 125
124	↑	Turbine Support & Shaft
125	↑	Turbine
126	7309811	Wire Harness, Sensor
127	7081201	Retainer, Nozzle & Venturi
128	7171145	Valve Body
129	7170319	O-Ring, 1/4” x 3/8” (2 req.)
130	1202600	Nut - Ferrule
–	7253808	Nozzle & Venturi Assembly (incl. Key Nos. 131-139)
131	7081104	Housing, Nozzle & Venturi
132	7095030	Cone Screen
133	1148800	Flow Plug, .3 gpm
134	7114533	Nozzle & Venturi Gasket Kit
	7204362	Gasket Only
135	7084607	Flow Plug, .15 gpm
136	7146043	Screen
137	7167659	Screen Support
138	7170262	O-Ring, 1-1/8” x 1-3/8”
139	7199729	Cap
140	7175199	Wave Washer
141	7171161	Valve Cover
142	7172997	Screw, #10 x 2-5/8” (8 req.)
143	7305150	Switch
144	7140738	Screw, #4-24 x 3/4” (2 req.)
■	3479901	Adaptor Kit, 1” to 1-1/4”

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